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Report of the First Session

ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH

Rome, 28 January - 2 February 1963

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1963

FAO FISHERIES REPORTS

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FIb/R6.1	(En)	Proceedings of the world scientific meeting on the biology of tunas and related species, Vol. 1 - report 1963
	(Fr)	Actes de la réunion scientifique mondiale sur la biologie du thon et des espèces voisines, Vol. 1 - rapport 1963
	(Es)	Actas de la reunión científica mundial sobre biología del atún y especies afines, Vol. 1 - informe 1963
FIb/R6.2		Proceedings of the world scientific meeting on the biology of tunas and related species, Vol. 2 - synopses 1963
		Actes de la réunion scientifique mondiale sur la biologie du thon et des espèces voisines, Vol. 2 - exposés synoptiques 1963
		Actas de la reunión científica mundial sobre biología del atún y especies afines, Vol. 2 - sinopsis 1963
FIb/R6.3		Proceedings of the world scientific meeting on the biology of tunas and related species, Vol. 3 - methodological papers and experience papers 1963
		Actes de la réunion scientifique mondiale sur la biologie du thon et des espèces voisines, Vol. 3 - comptes rendus de méthodes et d'experience 1963
		Actas de la reunión científica mundial sobre biología del atún y especies afines, Vol. 3 - trabajos metodológicos y trabajos de investigación 1963
FIe/R7		Report of the third session - continuing working party on fishery statistics in the North Atlantic area 1963
FIe/R8		Landing and marketing facilities at selected sea fishing ports (Preliminary draft) 1963
FIt/R9		Standards and requirements for fish handling, processing, distribution and quality control 1963
FIe/R10		Proceedings and basic working papers of the technical meeting on fishery co-operatives, Naples, 12-21 May 1959 1963
FIt/R11	(En)	Report of the second world fishing gear congress, London, 25-31 May 1963 1963
FIt/R11	(Fr)	Rapport du deuxième congrès mondial des engins de pêche, Londres, 25-31 mai 1963 1963
FIt/R11	(Es)	Informe del segundo congreso mundial de artes de pesca, Londres, 25-31 mayo 1963 1963
FI/R12		Informe de la primera reunión de la comisión asesora regional de pesca para el Atlántico sud-occidental (CARPAS) 1964
FIb/R13	(En)	Report of the FAO working party for rational utilization of tuna resources in the Atlantic ocean: first session, FAO, Rome, 25-30 October 1963 1963
FIb/R13	(Fr)	Rapport du groupe de travail FAO sur l'utilisation rationnelle des ressources thonières de l'océan Atlantique: première session, FAO, Rome, 25-30 octobre, 1963 1963
FIb/R13	(Es)	Informe del grupo de trabajo de la FAO sobre aprovechamiento racional de los recursos atuneros del océano Atlántico: primer período de sesiones, FAO, Roma, 25-30 octubre 1963 1963
FIb/R14	(En)	Report of the first session of the advisory committee on marine resources research: 28 January - 2 February 1963 1963

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REPORT OF THE FIRST SESSION OF THE ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH

Rome, 28 January-2 February 1963

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, December 1963

PREPARATION OF THIS REPORT

This document is the Report of the First Session of the Advisory Committee on Marine Resources Research, held in Rome, 28 January-2 February 1963.

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Pr 61-401me. Reports organization and general results achieved. Gives brief review of 1962-1963 program of the Fisheries Division in the field of marine resources research, with general considerations on draft program for 1964-1965. Discusses general problems concerning fishery oceanography and specific subjects on which advice is sought by IOC. Appends description of status of the committee and rules of procedure, conclusions and recommendations, list of papers presented, list of participants as well as the introductory address by Deputy Director-General of FAO.

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1. PROCEDURAL MATTERS

1.1 OPENING SESSION

In the absence from Rome of the Director-General of FAO, the Deputy Director-General Dr. Norman Wright, welcomed the members of the Committee and representatives of International Organizations participating in the First Session of the ACMRR [a/]. After reviewing the events which have led up to the establishment of the ACMRR, he pointed out some of the matters on which FAO would appreciate the valuable advice of the Committee. Dr. Wright referred to the progress made in developing practical working collaboration between FAO, UNESCO and the other Specialized Agencies concerned with marine sciences. FAO welcomed the designation of the ACMRR as the advisory body to the IOC on the fisheries aspects of oceanography, as a step towards the simplification and rationalization of such relations and concerted action on matters of common interest.

1.2 NOMINATION OF ACTING CHAIRMAN

On the proposal of Dr. C.E. Lucas, Dr. A. Needler was designated as Acting Chairman.

1.3 STATUTES [b/]; RULES OF PROCEDURE [c/]

Mr. G.R. Saint Pol, FAO Legal Counsel, explained the statutes of the Committee as decreed by the Director-General.

The provisional Rules of Procedure, drafted by the FAO Secretariat, were adopted without change on the proposal of Mr. Vernon E. Brock, seconded by Dr. C.E. Lucas. The Committee was later informed that the Rules of Procedure, as adopted by the Committee, had been approved by the Director-General.

1.4 ELECTION OF OFFICERS

Dr. Jean Furnestin proposed the confirmation of Dr. A. Needler as Chairman for the Session. This was seconded by Dr. N.K. Panikkar and approved by acclamation. Professor M. Uda was elected Vice-Chairman on the proposal of Dr. W.M. Chapman, seconded by Dr. N.K. Panikkar.

Dr. C.E. Lucas was elected Vice-Chairman as proposed by Dr. J. Furnestin and seconded by Dr. V. Angelescu. On the proposal of Dr. V. Brock, seconded by Dr. H. Rotschi, Dr. C.E. Lucas was nominated Rapporteur.

Dr. M. Ruivo, Chief, Research Programs Section, Fisheries Biology Branch, FAO, was appointed Secretary of the Committee by the Director-General.

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a/ Dr. Wright's address is reproduced in Annex II to this Report
b/ See Annex III
c/ See Annex IV

1.5 ADOPTION OF PROVISIONAL AGENDA a/

The Secretary called the attention of the participants to the fact that in discussing items 10, 11 and 12 and some other relevant matters raised under other Agenda items, the Committee would be acting in an advisory capacity to IOC. The Secretary also referred the Committee to recent correspondence between IOC and FAO on ACMRR matters. A letter from the IOC Chairman of 4 January 1963 informed the Director-General of FAO that as a result of unexpected delays in consultations the Bureau of the Commission had not been able to recommend names of two scientists from the U.S.S.R. in the field of fisheries oceanography, for nomination to the augmented Committee. The participants regretted not having at the First Session of the Committee the valuable contribution which could be expected from Soviet scientists, and expressed the hope that the IOC Bureau would forward their recommended names as soon as possible. Dr. W. Wooster, Secretary of IOC, informed the Meeting of the great interest of IOC in the Committee's advice and undertook to transmit to the Bureau of IOC the request concerning the Soviet scientists. After inclusion of a new item 8.8 Biological Statistics (fish catch and effort), the provisional agenda was adopted on the proposal of Dr. Chapman, seconded by Dr. Lucas.

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a/ See Annex I

2. FISHERIES DIVISION PROGRAM IN THE FIELD OF MARINE RESOURCES RESEARCH

2.1 GENERAL REVIEW OF THE 1962-63 PROGRAM (Agenda item 6) a/

Mr. S.J. Holt, Chief, Biology Branch, Fisheries Division of FAO, made an explanatory statement referring to the terms of reference of his Branch in the context of the Division, to the structure and system of work in the Branch, and to the relations between the Regular Program and the various field programs. He outlined the main activities carried out by the Branch, described their execution and commented on the different factors that influence this work. He referred to the work developed in cooperation with other international and with non-governmental organizations, and made particular reference to the Regional Fisheries Commissions and Councils under FAO.

During the discussion much attention was given to the relations with, and impact of, the projects under the Expanded Program of Technical Assistance and the United Nations Special Fund on the Regular Program of the Organization. Reference was made to the advisability of trying to articulate, as far as possible, EPTA and UNSF projects with the Regular Program to form a coherent whole. Among the difficulties in achieving the maximum benefit from field projects it was recognized that shortage of staff at Headquarters was restictive and that some improvements should be made in coordination with other interested Agencies. Because most of the preparatory work in connection with Special Fund projects is made long in advance of their operational phases, it was considered desirable that preparatory allocations should be made at an early stage and there should be a system for determining in advance projects likely to be approved by the Special Fund, especailly taking into consideration that many proposals which represent a considerable load of work to the Organization are eventually not put into operation. The rational utilization of EPTA projects, as predecessors, should be encouraged.

There was, further, the increasing difficulty in recruiting qualified experts to staff the Special Fund projects, because of their intermediate duration and the indeterminancy of the timing of their operational phases. On the one hand, projects do not last long enough for scientists to risk resignation from posts in their own countries, but are too prolonged for their governments normally to be able to give them leave of absence. On the other hand, it is difficult to arrange for experts with Program Appointments with FAO to proceed from one project to another, as there is no synchronization between them. It was suggested that the experience in executing Special Fund projects should be brought to the attention of countries considering proposals for similar projects in the same area, as a way of improving the formulation of these projects by the requesting governments.

Various ways of dealing with the operation of Special Fund projects were reviewed and reference was made to the difficulty of having projects under the joint execution of two or more Agencies. It seemed more practicable to have projects executed by the Agency having more direct interest in, or responsibility for, each project and where necessary sub-contracting a part of the project to other qualified UN Agencies.

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a/ Relevant documents: ACMRR/1/INF.3, 4, 5; ACMRR/1/WP.4

Cooperation among these could be improved by taking advantage of the existing machinery, particularly of the ACC Sub-Committee on Oceanography.

(See Annex VIII- Recommendation 1, 2, 3)

2.2 GENERAL CONSIDERATION OF DRAFT PROGRAM FOR 1964-65 (Agenda item 8) a/

Mr. Holt outlined briefly the main items in a draft program of work and budget for the next biennium, with special reference to the matters listed under item 8 of the Agenda b/, requiring detailed consideration by the Committee. He called attention to the fact that the document under discussion was a provisional one only and was also of a confidential nature - as also was some related information which had been made available to participants before and during the meeting - and should be treated as such.

Comments were made regarding the philosophy guiding the program for 1964/65. Before entering into the detailed discussion of the main points reviewed in the following sections of this Report, the Committee expressed views on matters of general interest to the formulation of the program. Particular attention was devoted to the role of Regional Fisheries Councils and Commissions under FAO. It was recognized that better contacts should be established between the Council Secretariats and research groups in the various Member Countries. Improvements in the activities of the Councils could be achieved through the allocation of priorities after an effective screening of the recommendations produced during their meetings. For this purpose, closer contact between their Secretariats and the Technical Secretaries on the Headquarters staff might help in defining the policy to be followed regarding research, taking into consideration the economic and cultural background in the regions concerned. The allocation of additional funds to permit implementation of more of the approved recommendations, and to facilitate the meeting, for this purpose, of groups of scientists working in the various areas, was considered necessary. The presence at meetings of the active scientists is of fundamental importance to the correct formulation of programs and their successful implementation. Additional resources for follow-up by the Secretariats and by Headquarters staff of recommendations made could help the original purpose to be achieved, and stimulate, when necessary, the research institutions engaged in such projects. A review of recommendations from Regional Councils and Training Centres should be made by FAO when formulating the program for the biennium. This is, indeed, a feature of the work of the Branch, and in addition, all these activities have to be considered in the context of the impact of the Special Fund and Technical Assistance Projects, which are financed separately and, in the case of the former, not within an overall plan. Operational plans for field projects should include allocation of funds for participation of their staff in regional meetings or in meetings directly relevant to the contribution of the projects to fishery development in the areas concerned.

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a/ Relevant document ACMRR/1/INF.12
b/ See Annex I

There was some discussion on the value and practicability of assessing the impact of the technical assistance programs on fisheries development. In spite of the interest of such an assessment, it was considered that it would be very difficult to make at present.

(See Annex VIII- Recommendation 3)

2.2.1 Intelligence on Current Research Activities (Agenda item 8.1) a/

The various activities undertaken by FAO in cooperation with other bodies and with individual scientists to develop the complex intelligence services for fisheries science were explained by the Secretariat. Particular attention was devoted to discussion of the various problems concerning the Current Bibliography for Aquatic Sciences and Fisheries. The Committee was of the opinion that this project was a very useful one and it encouraged the continuation of the enterprise, emphasizing the great interest of having a full coverage of all marine science matters, if possible bringing them together in a single scheme, or at least following the same presentation and the same coding and indexing system.

The opinion of the newly formed Working Party of SCOR on Marine Abstracts and Bibliographies would be of great help to a correct definition of further lines of development of this project. The support of other interested UN Agencies having responsibilities in the field of marine science, particularly UNESCO, was desirable.

The Committee was informed of the proposed joint publication by UNESCO and FAO of a quarterly newsletter, International Marine Science, and of the scope, organization, coverage, presentation, mailing list and other arrangements adopted. Some comments were made on the bulletins published by regional organizations in the light of this newsletter. The Committee appreciated the cooperative effort of UNESCO and FAO with the participation of other UN Agencies, and considered this enterprise as a good sign of the satisfactory cooperation now developing between them.

There was a general discussion on the desirability of systematically producing reviews of subjects in the marine sciences field. The potential value of such reviews is great, but it was the general consensus that it was too early to take any decision, and that the FAO Secretariat should follow the development of the projects of this kind undertaken by some private individuals and commercial enterprises.

(See Annex VIII - Recommendation 4)

2.2.2 Reference books (Agenda item 8.2)

The Committee was informed of the activities of FAO in producing methodological manuals and of the characteristics given to this project, taking into account, in certain cases, the fact that some subjects are not covered by commercial editions, or that

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a/ Relevant documents: ACMRR/1/INF.6, 16; ACMRR/1/WP.9

specific requests may be made for the preparation of manuals for training centres. Because the number of scientists able to write such manuals is relatively small, and they are limited by their other professional activities, this project is developing slowly. Some participants expressed the view that FAO should not take a perfectionist approach in such projects, in order to avoid delays in publication. The policy already adopted - of giving provisional versions a rather wide distribution, for comment, and interim use in FAO sponsored projects, until the final printed edition is available - was approved. On matters within the terms of reference of both FAO and UNESCO, mutual consultation and, when possible, joint action is desirable.

(See Annex VIII - Recommendation 4)

2.2.3 Standardization and intercalibration of methods and instruments (Agenda item 8.3) a/

In view of the development of research on a regional basis, and the extensive international cooperative investigations now developing, the intercalibration and, when possible, the standardization of methods in fisheries science is becoming increasingly necessary. The Committee expressed some concern at the dangers of premature standardization hindering scientific development, and considered that intercalibration is in many cases a more practical and rational approach. FAO should follow carefully the progress made by SCOR in matters concerning intercalibration and standardization of methods and instruments and should keep the regional fisheries bodies and fisheries laboratories informed of this.

The Committee discussed results that can be expected from the utilization of direct methods for the assessment of fish abundance, and of the great value of such techniques in unexplored or little explored areas. This is a field that is now being developed in many laboratories and that is being studied by various groups of specialists connected with regional bodies. In spite of the fact that such methods are probably not yet mature for generalized use, it was considered advisable to prepare a review of recent progress for the guidance of FAO in planning exploratory fishing activities in regions not having traditional off-shore fisheries.

(See Annex VIII - Recommendation 5)

2.2.4 Systematics and nomenclature of marine organisms (Agenda item 8.4) b/

Various aspects of systematics of fishes and nomenclature of marine organisms for the purpose of fishery science were discussed. FAO was not directly concerned with systematic studies, but in current work, in connection with both the Regular and the field programs there was the need for a better knowledge of the taxonomy of some groups and for lists of scientific and common names of fishes, particularly of species of commercial

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a/ Relevant documents: ACMRR/1/INF.9, 21; ACMRR/1/WP.9, 12
b/ Relevant documents: ACMRR/1/INF.11, 15, 17; ACMRR/1/WP.3, 11

value. The work on systematics of marine organisms carried out through some of the Fisheries Institutes set up under the Special Fund, as in Peru, was referred to, and the importance of these studies was recognized. The Committee regarded work on the preparation of lists of names of species of direct use to man, as one of the urgent tasks of FAO, and considered close cooperation with UNESCO desirable in these matters. For the preparation of the lists of marine organisms FAO might use outside experts working under contract.

(See Annex VIII - Recommendation 6)

2.2.5 Synopses of information (Agenda item 8.5) a/

The Committee was informed of the work of FAO on the preparation of synopses of information by species and by oceanic areas, and some reference was made to the synopses by subjects and by countries and regions - a Divisional enterprise. The close cooperation in this activity with other Organizations, Institutes and individual scientists was commended, as well as the adoption of standard patterns, general coordination being ensured by FAO. The Committee considered the species synopses one of the most important activities of the Branch. FAO should continue to play an active part in this field, ensuring the coordination of this work and the hope was expressed that Research Institutions would agree to give facilities for such collaboration. The scope and coverage of the oceanic synopses was described and cooperation with ICES in the preparation of a Synopsis for the North Sea, and with Professor Hela's group at IAEA (International Laboratory on Marine Radioactivity, Monaco) on the Mediterranean synopses was referred to. The meeting was informed that arrangements had been made for the publication of the North Sea Synopsis, in sections, by the American Geographic Society as folios of the Serial Atlas for the Marine Environment, on the Advisory Group for which both ICES and FAO were represented. Some discussion was held on desirability of such arrangements with the new West African Fisheries Commission, the South West Atlantic Fisheries Commission, and other international bodies, for the publication of results of regional surveys. Such an arrangement should assist biologists in the utilization of environmental data. The Committee encouraged the project concerning the preparation of oceanic synopses and considered that close cooperation and consultation with regional bodies was highly desirable. It was proposed that the formation of a Joint Working Group of the GFCM and the International Commission for the Scientific Exploration of the Mediterranean Sea should be suggested to those bodies, to carry forward the preliminary work done by Professor Hela.

(See Annex VIII - Recommendation 5)

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a/ Relevant document: ACMRR/1/INF.20

2.2.6 World Meetings (Agenda item 8.6) a/

The Secretariat explained briefly the scope, objectives and methods of work for world meetings on the biology of species and stocks organized by FAO. The main achievements were reviewed, with particular reference to the meetings recently held on sardines and tunas. The Committee was also informed of the arrangements established for the formulation and implementation of the resolutions adopted by such meetings. The recommendation made by the 11th FAO Conference that the possibility be explored of holding a world symposium on fisheries oceanography during the 1964/65 biennium and the recommendation approved by the ICES supporting a world meeting on the biology and culture of shrimps and prawns were brought to the attention of the Committee.

The Committee expressed the opinion that world meetings were extremely valuable, because they summarize knowledge in the selected fields, stimulate new work and increase communication between interested scientists. The value of the world meetings would be improved by a clear identification of subjects and an objective assessment of priorities. For this purpose, consultation with regional bodies and active scientists in fisheries science was desirable; ACMRR could help to establish priorities.

The Committee considered that a symposium on the Effects of Environment on Fish Abundance and Distribution should receive top priority. The Secretariat was requested to prepare some material for further discussion and final decision at the second ACMRR session.

During the discussion, reference was made to the possibility of obtaining the support of the Freedom From Hunger Campaign for the organization of a meeting on the scientific aspects of protein production from clupeoid fishes, with the scope of working out what research remains to be undertaken for the rational utilization of this food source. It was initially envisaged that this problem should be raised during the World Food Congress. However, no decision was taken on this matter.

(See Annex VIII - Recommendation 7)

2.2.7 Education and training (Agenda item 8.7) b/

The Secretary briefly reviewed for the Committee the FAO policy and procedures concerning educational activities in the field of fisheries research and gave some information on fellowships, training centres and seminars planned for the 1964-65 biennium. He called the attention of the Committee to the arrangements made by FAO Fisheries Division with the UNESCO Office of Oceanography, in accordance with the recommendations of the ACC Subcommittee on Oceanography, for the mutual exchange of information, consultation and cooperation in such matters, particularly concerning the procedure of awarding fellowships in subject fields of interest to both agencies.

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a/ Relevant documents: ACMRR/1/INF.4, 15, 17, 22; ACMRR/1/WP.3
b/ Relevant documents: ACMRR/1/INF.3, 5, 12; ACMRR/1/WP.4, 10

The Director of the UNESCO Office of Oceanography gave some additional information on this subject to the Committee.

The Committee appreciated the attention devoted by FAO Fisheries Division to educational matters concerning fisheries research, commended FAO and UNESCO on the steps taken towards concerted action on such subjects, and encouraged continued work along present lines.

(See Annex VIII - Recommendation 8)

2.2.8 Biological statistics - fish catches and effort (Agenda item 8.8) a/

Mr. Popper introduced the subject by referring to the historical background and FAO policy on fisheries statistics, and gave some information on present activities and future plans, with special reference to the publication of an FAO Bulletin of Fishery Statistics.

Mr. Gertenbach briefly outlined FAO's main activities regarding the coordination and development of international standards for fisheries statistics and the revision of the International Statistical Classification of Aquatic Animals and Plants. He reviewed the progress made in the formulation of a series of basic concepts used in fisheries statistics and in developing, with the cooperation of ICES and ICNAF, forms for an inter-agency common reporting system for the North Atlantic region. He also commented on various aspects of the assistance given to countries to improve national fisheries statistics.

In the discussion that followed, the Committee expressed its agreement in general with FAO's approach and noted with satisfaction the fruitful cooperation established with ICES and ICNAF in the field of fisheries statistics. Some speakers emphasized the valuable work accomplished by the Continuing Working Party on Fisheries Statistics in the North Atlantic region and it was suggested that this group should be requested to consider the possible value of extending to other regions the statistical system developed for the North Atlantic. The need for close cooperation with regional and local policy making bodies in order to further the collection and compilation of fisheries statistics was stressed.

The inadequacy or complete lack of statistics in some areas where fisheries are rapidly developing, as in the case of the Tropical Atlantic, or can be expected to grow in the near future, particularly as a result of the activities of long-range fleets, was mentioned and discussed at length, in the light of economic development and management problems and conservation requirements. Attention was drawn to the fact that some oceanic and coastal areas are not covered by any regional fisheries bodies and FAO was urged to stimulate the expansion or the establishment of new regional fisheries bodies when required for the rational utilization of living marine resources. During the discussion of this

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a/ Relevant documents: ACMRR/1/INF.3, 5, 12, 15, 23; ACMRR/1/WP.15

problem various speakers recalled the responsibility of countries with regard to the conservation of common property resources and their duty to collect adequate records of fishing operations. In connection with this, reference was made to the new long-range fisheries for Tuna, and for some other pelagic and demersal species. The Committee suggested that FAO approach the countries engaged in such fisheries requesting detailed statistics which are not being reported to regional bodies and also that it make a survey of the systems and facilities for the collection of fisheries statistics in member countries. Special attention should be paid to the improvement of fisheries statistics in the area covered by the International Indian Ocean Expedition.

The FAO Secretariat expressed its willingness in principle to follow the suggestions made by the Committee and called attention to the fact that these requests would represent a further heavy load on the staff, and that their implementation would necessitate more facilities for the Statistical Branch. The Committee recognized this need and considered that these aspects should be considered when discussing budgetary and personnel probems under items 6 and 7 (Fisheries Division Regular Program).

Two recommendations reflecting the main points of the discussion were adopted.

(See Annex VIII-Recommendations 1, 9)

3. COORDINATION WITH OTHER BODIES (Agenda items 9.1, 9.5) a/

For the information of the Committee the Secretary recalled the existing machinery and procedures followed by the FAO Fisheries Division to coordinate programs and activities with other bodies with which it maintains working relations on matters concerning marine resources research and its application. The part played by the ACC Subcommittee on Oceanography in coordinating the activities of the various UN Agencies concerned in this field was referred to. The Secretary also spoke of the present FAO Fisheries Councils and Commissions and called the attention of the Committee to their programs of work and to some selected matters of direct interest to ACMRR. He reported, too, on the arrangements for providing technical secretaries to FAO Fisheries regional bodies, and briefly reviewed some aspects of the complex net-work of the relations and cooperative arrangements established with other non-FAO fisheries organizations, as well as with non-governmental bodies, with particular reference to ICSU and SCOR.

This review was considered of great value as a general background for the work of the Committee. To avoid diversion from the main tasks assigned to this first Session of the Committee, it was decided that problems of coordination should be raised and discussed in connection with each specific item of the Agenda.

(See Annex VIII - Recomendations 1, 9)

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a/ Relevant documents: ACMRR/1/INF.2, 4, 5, 9, 12, 13, 23

4. GENERAL PROBLEMS CONCERNING OCEANOGRAPHY AND FISHERIES RESEARCH

4.1 CONCEPT OF FISHERY OCEANOGRAPHY (Agenda item 10.1) a/

The Secretary called the attention of the Committee to the results of the SCOR Working Party on Fishery Oceanography, and to other recent attempts that have been made to define the concept of fishery oceanography. In spite of the fact that FAO did not consider it appropriate to reopen discussion of this matter in ACMRR, he stressed the implications that such a definition might have concerning the activities of national and international institutions, as well as on the UN Agencies dealing with marine sciences. The Secretary informed the Committee that FAO has expressed reservations on the concept of Fishery oceanography as defined by the SCOR Working Party, and that FAO adheres to a much more restricted concept of Fishery oceanography, such as is expressed in various documents published by FAO Biology Branch or prepared in past years by FAO staff members and which have guided the activities of the Organization under its Regular and Technical Assistance Programs. Because of the priority given to other items on the agenda, the Committee took note of the position adopted by the FAO Secretariat as a contribution to the clarification of such a controversial matter.

4.2 ROLE OF FISHERIES RESEARCH INSTITUTIONS IN WORLD OCEAN RESEARCH PROJECTS (Agenda item 10.3)

The IOC Secretary introduced the subject and called the attention of the Committee to the impact of large scale cooperative oceanographic investigations on fisheries biological research and fisheries surveys, and to the role of fishery research institutions and organizations on large-scale world ocean research projects. The concentration of effort on big international cooperative investigations is today one of the most efficient means to obtain synoptic data and can be considered as a more efficient way of dealing with environmental research, than by individual un-coordinated national approaches.

Several of the participants expressed concern that these big expeditions risk diversion of effort from some areas at present under study and introduce perturbations in the scientific structure of some countries. It was, however, recognized that effort engaged in such expeditions comes from organizations possessing efficient resources to undertake simultaneously various enterprises requiring sea going vessels and also the necessary structure to ensure the effective utilization of data collected.

After a brief review of some of the big international investigations at present in operation the Committee recognized the need to ensure that fisheries scientists participate from the beginning in the planning of such expeditions to guarantee that the requirements of fisheries research will be duly integrated into the program. It is also expected that these expeditions will lead to closer communication between the fisheries research institutions in the area and the workers of such expeditions. This requires a simplification of communications and the adoption of the most direct channels to deal with such programs. This general discussion was considered as an introduction to the following items, and details will be considered when dealing with the specific IOC requests for advice.

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a/ Relevant documents: ACMRR/1/INF.7, 8, 19; ACMRR/1/WP.5

5. MATTERS CONCERNING IOC

5.1 IOC'S REQUESTS FOR ADVICE (Agenda item 11) a/

During its second session, the Intergovernmental Oceanographic Commission (IOC) recognized its need for scientific advice on Fishery oceanography, and the desirability of achieving effective use of research facilities provided for fisheries in coordination with those provided for other aspects of oceanography. Under this item of the Agenda specific matters referred to ACMRR by the IOC Secretariat were considered, and in addition those the Committee decided to discuss on the basis of the Report of the second session of the IOC.

5.1.1 Comprehensive program for world ocean study - IOC/II/Res.2 (Agenda item 11.1) b/

Dr. Wooster informed the meeting briefly of the general lines that have shaped the progressive program for world ocean study and called attention to the IOC Resolution referring to the General Scientific Framework (GSF) and the action taken to ensure that this framework will take account of regional programs. The Committee requested the ACMRR Secretariat to ensure, in collaboration with the IOC Secretariat and SCOR, that the FAO and non-FAO regional fisheries bodies as well as the fisheries scientists interested, are informed of this proposal and their opinions solicited.

The Committee decided to set up a Working Party with terms of reference including the review of the comments made by regional fisheries bodies and individual fishery scientists, and the formulating of the fisheries requirements under the comprehensive world ocean study, in which they should work in close cooperation with SCOR. The Committee recommended that the Working Party keep liaison with SCOR and other international organizations concerned with this program. The Working Party should submit its report to the Committee, but it was hoped that later it would be possible to establish a joint working group with SCOR for the formulation of the GSF. The names of Drs. Cushing, Panikkar, Rotschi and Mr. Holt, or alternate, (for the secretariat) were proposed to be transmitted to the Director-General for confirmation.

(See Annex VIII -Recommendation 10)

5.1.2 International Indian Ocean Expedition - IOC/II/Res.3 (Agenda item 11.2)

The Committee noted the potential value of the International Indian Ocean Expedition for the benefit of fisheries research in the area, and the steps adopted at the second IOC session to ensure proper representation of fisheries scientific requirements at the planning level through the nomination of Dr. D.N.F. Hall, from the East African Marine Fisheries Research Organization (Zanzibar) as Fisheries Subject Leader of the IIOE. That

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a/ Relevant documents: ACMRR/1/INF.9; ACMRR/1/WP.5
b/ Relevant documents: ACMRR/1/INF.18; ACMRR/1/WP.14

nomination being of recent date no effective arrangement had yet been established, but close communication with the FAO Fisheries Division was highly desirable. As Dr. Hall was expected to visit the IOC Secretariat in Paris, in the near future, it was recommended that he should also visit the FAO Secretariat for consultations.

The Committee was informed of the action already taken by FAO to interest member governments in the area participating in the IIOE, and in the decisions made at the last meeting of the Indo-Pacific Fisheries Council on these matters.

The Committee designated Dr. Panikkar as Special Rapporteur to the Committee on the IIOE.

(See Annex VIII-Recommendation 11)

5.1.3 International Investigations of the North Atlantic and Pacific Oceans - IOC/II/Res.6, 12, 13 (Agenda item 11.3)

The Committee noted the interest of these projects to fisheries research and development, and commended the participation of fisheries workers and institutions in the areas in such international investigations. The Secretariat informed the Committee that FAO was in close touch with the Environmental Survey planned by ICNAF.

Reference was made to the use of the echo-sounder as a quantitative survey instrument and the desirability of making extensive use of this method for fisheries research purposes during the expeditions. The Committee was of the opinion that the plans for the expeditions in the North Atlantic and in the Pacific Ocean should be considered by the ACMRR Working Group responsible for GSF, bearing in mind the impact of these expeditions on regional programs and vice versa. In this context the GSF should be considered as a general plan, the regional projects being parts of it.

The Committee noted the great potential value of the Kuroshio program to marine resources research and recommended that it should be brought to the attention of the Indo-Pacific Fisheries Council, urging support for it by the Council and by its member countries.

The Committee expressed the view that if IOC decides to organize a meeting to formulate plans for the cooperative investigations of the Kuroshio, fisheries representatives should be invited.

(See Annex VIII-Recommendation 12)

5.1.4 International Cooperative Investigations of the Tropical Atlantic - IOC/II/Res.7 (Agenda item 11.4)

The Secretariat informed the Committee of the action taken by FAO, particularly through the FAO Regional Fisheries Office in Accra and the newly established Regional Fisheries Commission for West Africa to keep member countries informed of ICITA and to stimulate the participation of fisheries research laboratories and scientists. The participation of FAO experts under EPTA (in Ghana) has been active and that of experts under the UNSF (Western Nigeria) is envisaged.

The Committee recognized the great potential value of ICITA for marine research in the area and requested FAO to urge the relevant governments, both within and outside the area, to give all possible assistance to these investigations.

Reference was made to previous discussions on fisheries statistics (Item 2.2.8 of the Report) and the Committee again stressed the urgent need of improving catch and effort statistics in the area covered by ICITA, particularly along the African coast.

(See Annex VIII -Recommendation 13)

5.1.5 South Atlantic cooperative investigations - IOC/II/Res.11 (Agenda item 11.5) a/

The Secretary of the IOC informed the Committee of the present state of the South Atlantic cooperative investigations undertaken by Argentina, Brazil and Uruguay, with the participation of fisheries departments, universities and naval hydrographic offices.

The Secretariat called the attention of the Committee to the recommendations pertinent to the South Atlantic cooperative investigations, approved at the recent meeting of the South Atlantic Fisheries Advisory Commission (SWAFAC) and reviewed the activities carried out in the area by the FAO experts working under EPTA in the Three Countries Project (Argentina, Brazil and Uruguay - ABU).

The Committee recognized the value for fisheries research of the cooperative investigations launched by the three countries, and noted with appreciation the plans for further expansion of this project. The Committee further noted with satisfaction the interest shown by SWAFAC and suggested that the Commission should take an active part in the coordination of the program for which purpose the establishment of a Working Group under the Commission would be advisable. The Committee also suggested that SWAFAC should recommend its member countries to give full support to this project through their fisheries research institutions.

(See Annex VIII-Recommendation 14)

5.1.6 Study of the means of speedy utilization of synoptic oceanographic data - IOC/II/Res.14 (Agenda item 11.6)

The Committee considered the request made by IOC and recognized that rapid transmission, compilation and retrieval of synoptic observations can become a powerful tool for fisheries research and exploration, and noted that various groups connected with regional bodies are paying great attention to the development of these systems. Some members expressed the opinion that the study of the utilization of synoptic observations should also include biological data when possible. The selection of adequate systems of communication is of fundamental importance for the success of this method.

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a/ Relevant documents: ACMRR/1/INF.23

The Committee considered that it was not possible to go further at this stage and proposed the establishment of a small Working Group of specialists who could start work by correspondence and meet later to collect and review available information and prepare a request for future consideration by the Committee. The Working Group should also consider matters concerning fixed oceanographic stations and data exchange. The names recommended for this Working Group were: Mr. Vernon Brock (Convener), Dr. J. Eggvin and Prof. M. Uda. The name of Dr. M. Blackburn was later added.

(See Annex VIII - Recommendation 15)

5.1.7 Fixed oceanographic stations and their legal status - IOC/II/Res. 17, 18 (Agenda item 11.7)

The Committee was informed that the studies concerning the legal status of fixed oceanographic stations were in progress by the IOC Secretariat and IMCO. FAO is expected to assist in establishing a list of individuals or officers through which the location of the stations can be brought to the attention of fishermen. The Committee considered, however, that this was an administrative matter that should be dealt with directly by the FAO and IOC Secretariat. The Committee recognized the interest of the fixed oceanographic stations to fisheries research and discussed also the possibility of the fullest utilization of reference stations. Realizing that the discussion on this point requires full documentation and the consideration of complex technical problems, the Committee decided that the same Working Group previously appointed to study the utilization of synoptic data, with the addition of another member (Dr. M. Blackburn) should also consider the present and potential usefulness of fixed stations and the development of their use through the collection of biological information, and report to the Second ACMRR Session.

(See Annex VIII - Recommendation 15)

5.1.8 Standardization and intercalibration of oceanographic techniques and methods - IOC/II/Res.19 (Agenda item 11.8) a/

The Committee was informed of the activities carried out by SCOR on matters concerning the standardization and intercalibration of methods (salinity, optical measurements, plant pigments, C14, dissolved oxygen, nutrients, zoo-plankton, current measurements). Some of this work is being implemented through joint Working Groups with other scientific organizations. Progress would be reviewed at the next SCOR meeting in Halifax.

Reference was made to the need for standardization of some methods used in fisheries science and to the efforts made in this field by FAO Biology Branch. The Committee recognized that it was highly desirable to intercalibrate echo-sounders and similar apparatus. The Committee expressed the opinion that even if standardization should be achieved in certain cases, in others it was liable to hamper the development of methods - intercalibration being actually in many cases the best solution.

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a/ Relevant documents: ACMRR/1/WP.12

The Committee felt that its function was to encourage and stimulate coordination in this field. The Committee requested the FAO Secretariat to follow developments carefully and, for this purpose, to establish close contact with SCOR.

No formal recommendation was adopted on this item.

5.1.9 Data Exchange - IOC/II/Res.20 (Agenda item 11.9)

Dr. Wooster reviewed for the Committee the main points of the report of the meeting of the IOC Working Group on the Organization of Oceanographic Data Exchange and pointed out some of the specific recommendations approved.

In the discussions which followed the importance of data exchange for progress in oceanographic research was stressed and the value of the World Data Centres' existing facilities for data and information storage, treatment and retrieval purposes were referred to. Reference was made to the work accomplished by regional fisheries bodies, particularly by ICES, to develop data exchange. Comments were also made on various attempts madeto improve systems for compilation and pooling of marine biological and fisheries data, particularly those required for stock assessment.

The difficulties of such projects were pointed out. Comments were made on the substantial differences which exist between physical and chemical data and marine biological and fisheries data for purposes of developing data exchange systems, and the different approaches that result from these differences.

No specific action was taken since participants felt insufficiently prepared during the present session for a detailed and thorough discussion. The Committee decided to refer this item for preliminary consideration by the Working Group established to study the means of speedy utilization of synoptic oceanographic data (see 5.16 of this Report) and to consider it again at the Second Session of ACMRR.

During the discussion, reference was made to the increasing importance of research projects in fisheries and oceanography financed by the UN Special Fund. Considering the value of the data collected under internationally sponsored projects for the scientific community as a whole, the general opinion was that every effort should be made to make available such data to the World Oceanographic Data Centres.

(See Annex VIII-Recommendation 16)

5.2 OTHER PROPOSALS TO IOC (Agenda item 12)

Matters relevant to the IOC which were raised during the discussion of other Agenda items, and matters referred to in documents of the Commission on which no specific request for advice had been received but on which the Committee decided to express its point of view, were considered under this item.

5.2.1 Second International Congress (Agenda item 12) a/

Discussion was based on the part of the IOC Report on the Second Session of the Commission (Item 7b) which refers to the organization of the Second International Oceanographic Congress. The Secretariat mentioned that SCOR had been requested to explore ways and means by which a host country - probably the U.S.S.R. - may be found, to consider date of the congress, and to develop a suitable program for it.

The Committee was of the opinion that the fisheries scientific community should participate in the planning of the Congress and requested the FAO Secretariat to bring this point to the attention of the IOC Secretariat, UNESCO and SCOR, and to follow developments.

Considering that other scientific meetings on related subjects are under consideration by various agencies, opinion was expressed that overlapping should be avoided and attempts should be made to ensure that the programs of these meetings are complementary. The FAO Secretariat was advised to raise this matter at the next meeting of the ACC Sub-Committee on Oceanography and to study ways for the effective cooperation between UN agencies on these projects.

The Committee felt that no special recommendation was needed at this stage and decided to reconsider this question at its next session.

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a/ Relevant documents: ACMRR/1/INF.9

6. STIMULATING AND ASSISTING RESEARCH IN PARTICULAR FIELDS

The Committee concentrated discussions on the various aspects concerning the International Biological Program (IBP) and other specialized subjects that were not previously studied under other items of the Agenda, and which might require the establishment of Working Groups or Sub-committees. Some thought was given to possible guide lines for long-term action by FAO in the field of marine resources research. The Committee felt, however, that such guide lines may be identified from study of the Report of the Committee's debates.

6.1 FAO PARTICIPATION IN THE INTERNATIONAL BIOLOGICAL PROGRAM (Agenda item 13) a/

Dr. Glover introduced the subject giving the historical background of the ICSU project and summarized its latest developments. The Committee was informed that FAO Fisheries Division had expressed a deep interest in those parts of the IBP concerned with marine and freshwater investigations and had emphasized that study of the living aquatic resources (including fisheries research) could profit greatly from the progress made in basic studies as considered by the IBP, especially in studies of dynamics of eco-systems and on the biology of their components. FAO had informed the Planning Committee of IBP of its wish to cooperate in the project and had drawn attention to the desirability, when developing the marine aspects of IBP, that fullest use be made of existing machinery for the international cooperation and conduct of marine research. FAO also suggested that the IBP should consider the desirability of including in its program the measurement of benthos, plankton and nekton, total biomass, the classification and mapping of marine communities, the survey of littoral seaweeds, the study of chemical composition and its variation in marine animals and plants, and the formulation, testing and application of dynamic models of marine communities.

Dr. Glover informed the meeting of the discussions held during the meeting of the IBP Planning Committee last week on the definition of the objectives of the IBP requiring world wide study: (1) of the processes of organic productivity in the land, in the feshwater and the seas, so that adequate estimates might be made of the potential yield of new, as well as existing natural resources; and (2) of human adaptability to the changing conditions. Dr. Glover called attention to the recommendation requesting the formation of a Working Group to plan and develop international programs on the biological productivity of communities throughout the world, including littoral regions. The Committee expressed the opinion that the IBP should be an integrated project but, nevertheless, it should preserve enough flexibility to integrate the participation of various types of institutions which might show interest in the work. This, however, requires effective coordination in techniques and methodology and in data collection. Reference was made to the training aspects considered by the IBP Planning Committee and the expected benefits for developing countries in the training of specialists in various fields of biological research. Some of the participants expressed concern at the dangers that can result from stimulating the developing countries to undertake research that

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a/ Relevant documents: ACMRR/1/INF.11; ACMRR/1/WP.16

in some instances does not correspond to their stage of scientific development, and consequently their own scientific development may be disturbed by projects established which correspond more to the scientific interests of the very advanced countries.

The Committee supported the ideas of the IBP Planning Committee to establish a joint Working Group composed of six scientists - two to be nominated by SCOR, two by ACMRR and two by the IBP Planning Committee (these representatives are Mr. R.S. Glover, U.K., and Dr. L.K. Walford, U.S.A.).

The Committee considering the close connection between matters assigned to the ACMRR Working Group on the General Scientific Framework (GSF) and the IBP, recommended the nomination, on behalf of the ACMRR, of Dr. D. Cushing and Dr. N.K. Panikkar.

Considering that at the next SCOR meeting in Halifax many of the marine scientists more directly interested in the future development of IBP would be together, the Committee suggested that on an ad hoc basis the members of the joint Working Group, mentioned above, should meet and have some preliminary discussions on the line of activity to be followed.

(See Annex VIII -Recommendation 17)

6.2 GUIDE LINES FOR FUTURE PROGRAMS (Agenda item 14) a/

The Committee was requested by the Secretariat to make comments for the guidance of FAO on long-term projects that might contribute to the development of fisheries research and the more rational exploitation of living aquatic resources. The Secretariat referred to the hopes put on the utilization of biochemical and chromatographic methods of identifying sub-populations of fishes, and point out the need to stimulate study of dynamic models for marine communities through all trophic levels.

The Secretariat stated that FAO had been following the progress made in rearing marine animals and the various scientific and technical problems related to the improvement of marine resources, and was of the opinion that a review of recent achievements, and possibly, a symposium on this subject, might become necessary in the near future, to assess the situation. Due to lack of time, only a brief discussion was possible on these topics and a recommendation reflecting the sense of the discussion was adopted by the Committee.

(See Annex VIII -Recommendation 18)

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a/ Relevant documents: ACMRR/1/21; ACMRR/1/WP.11, 12

7. DATE AND PLACE OF THE SECOND SESSION (Agenda item 15)

The Committee, taking into account the fact that IOC's third session was scheduled for the Spring of 1964, as was also the ICNAF Environmental Symposium (in which several of the ACMRR members were expected to participate), decided that the most appropriate time for ACMRR to have its Second Session would be between the ICNAF Symposium and the IOC session, and near in time to one or other of these meetings.

It was also suggested that if any of the ACMRR Working Groups needed to be convened, they should meet in Rome, a few days prior to the ACMRR's Session, to facilitate contact between the members of the Working Groups and the Committee itself.

(See Annex VIII -Recommendation 19)

8. ELECTION OF OFFICERS FOR THE SECOND SESSION (Agenda item 16)

The Committee unanimously re-elected for the following year the officers who served during the First Session: Dr. A.W.H. Needler as Chairman; Dr. C. Lucas as Vice-Chairman and Rapporteur; Prof. M. Uda as Vice-Chairman.

(See Annex VIII -Recommendation 20)

9. OTHER BUSINESS (Agenda item 17)

The Committee considered that the Report of its discussions, the conclusions and recommendations arising from them, would be of interest and value to a wide variety of institutions, agencies and scientists, and made some suggestions on the presentation and distribution of the final Report.

(See Annex VIII -Recommendation 21)

10. ADJOURNMENT (Agenda item 18)

The Chairman, on behalf of Members of the Committee, expressed to the Director-General of FAO his appreciation of the meeting and of the facilities offered for it by FAO, and the secretariat services provided.

The Session was then adjourned.

ANNEX I

AGENDA

1. Opening of the Session.

2. Nomination of Acting Chairman.

3. Consideration of Rules of Procedure.

4. Election of Officers.

5. Adoption of Agenda.

6. General review of Fisheries Division current program (1962-63) in the field of Marine Resources Research (Background information for discussion of the following items).

7. General consideration of draft program for 1964-65.

8. Discussion of selected items or aspects of 1964-65 program.

   8.1 Intelligence on Current Research Activities (Newsletters; Annual Reviews - recent advances in research fields; bibliography and documentation; registers of experts and institutions).
   8.2 Reference books (manuals of Methods, Handbooks of data on particular subjects, glossaries, dictionaries).
   8.3 Development, standardization and calibration of methods and instruments.
   8.4 Systematics and nomenclature of marine organisms for purposes of fisheries science.
   8.5 Synopses of information (by species; by oceanic areas; by countries and regions; by subjects).
   8.6 World Meetings (general value, methods of approach, priorities, follow-up).
   8.7 Education and Training (fellowships, courses, training centres, teaching materials).
   8.8 Biological statistics (fish catch and effort).

9. Coordination of programs and activities with those of other bodies.

   9.1 UN Agencies (Role of ACC Sub-Committee).
   9.2 FAO bodies (regional fisheries councils and commissions; technical secretariat arrangements; relation of programs, their coordination with non-FAO regional bodies, tuna and other specialized committees).
   9.3 Non-FAO regional and other fisheries organizations.
   9.4 Non-governmental organizations (ICSU, SCOR).
   9.5 National bodies (Role of national committees as means of simplifying relations between national bodies and international organizations.

*10. General problems concerning oceanography and fisheries research.

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* For these items the Committee will be acting in an advisory capacity to IOC. Discussion will include the relevant items raised under other Agenda items.

10.1 Concept of Fishery Oceanography in the context of Fisheries science (FAO Secretariat).
10.2 Impact of large-scale cooperative investigations of the oceans on Fisheries Biology Research and Surveys (IOC Secretariat).
10.3 Role of Fisheries Research Institutions and Organizations in large-scale world ocean research projects (IOC Secretariat).

*11. IOC's requests for advice.

11.1 Comprehensive program for world ocean study (IOC/II Res. 2).
11.2 International Indian Ocean Expedition (IOC/II Res. 3, 4, 5).
11.3 International Investigations of the Northern Atlantic and Pacific Oceans (IOC/II Res. 6, 12, 13).
11.4 International Cooperative Investigations of the Tropical Atlantic (IOC/II Res. 7).
11.5 South Atlantic Cooperative Investigations by Argentina, Brazil and Uruguay (IOC/II Res. 11).
11.6 Study of the means of speedy utilization of synoptic oceanographic data (IOC/II Res. 14).
11.7 Fixed oceanographic stations and their legal status (IOC/II Res. 17, 18).
11.8 Standardization and intercalibration of oceanographic techniques and methods (IOC/II Res. 19).
11.9 Data exchanges (IOC/II Res. 20).

*12. Proposals to IOC (including Second International Oceanographic Congress).

13. Working Groups and Sub-committees (possible groups might include: direct assessment by echo-sounding and other methods; standardization and intercalibration of methods (cooperation with SCOR); biochemical and chromographical methods of identifying sub-populations; FAO's participation in IBP (cooperation with SCOR).

14. Guide lines for future programs.

14.1 Stimulating and assisting long-term research in particular fields such as marine resources improvement, and dynamic models for marine communities.
14.2 Relations between academic and fisheries research units.
14.3 Assisting establishment and orientation of fisheries research programs in developing countries.

15. Date and place of the Second Session of ACMRR.

16. Election of the Officers for the next year.

17. Other business.

18. Adjournment.

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* For these items the Committee will be acting in an advisory capacity to IOC. Discussion will include the relevant items raised under other Agenda items.

ANNEX II

INTRODUCTORY ADDRESS BY DR. NORMAN WRIGHT
Deputy Director-General of FAO

In the absence from Rome of the Director-General I am most happy to welcome you - members and representatives of International Organizations - to this first meeting of the ACMRR. I think you all know the events of the past few years which have led to the establishment of the Committee by the Director-General on the authority given to him by the 11th Session of the FAO Conference in 1961.

The growth and expansion of highly industrialized sea fisheries, and the further development of traditional inshore fisheries, are having an increasing impact on the living natural resources on which they depend. At the same time they are leading to an intensified search for new resources. Both these factors reinforce the needs for scientific study of all such resources as a basis for their wise and efficient use. These needs have been recognized and formulated, and ways and means of fulfilling them have been suggested, by successive UN Conferences. I need only, I think, refer to the 1949 Scientific Conference on the Conservation and Utilization of Resources; by the 1955 International Conference on the Conservation of the Living Resources of the Sea, and by the 1958 Conference on the Law of the Sea. By the phrase "wise and efficient use" I mean not only the conservation and improvement of the stocks by rational management practices, but also the application of knowledge about the biology of the fish and their environment in such a way as to improve catching techniques and fishing operations generally. There are now, therefore, not only urgent needs for forecasts of the abundance and movements of fish already being exploited by the world's large fishing fleets, but also for direct methods of quantitative surveys of stocks in the lesser known areas. Here I would remind you that, with progress in the techniques of treating and handling and marketing fish and the new uses being found for marine products, the scope of the fishery scientists' work is being extended: not only geographically, but also with regard to the variety of species needing investigation as potential present and future resources.

The scope of fisheries research is also extending in depth, not only depth in its literal sense, but also in its figurative sense in respect of its penetration into broader disciplines of biology - such as animal (or should I say "fish") behaviour, physiology and genetics - into other branches of natural science. This extension has many causes, but important among them is the greater attention being given to the increase of existing fish stocks and to the creation of new ones by a variety of means - by for example, transplantation, selection and stocking, fertilization, environmental control and habitat improvement. These means, considered together, truly imply purposive marine cultivation and husbandry, rather than fortuitous hunting.

Parallel with the broadening of scientific interest, there is now occurring a great leap forward in the technology of submarine exploration, of which even a general biologist like myself cannot fail to have become at least superficially acquainted. After the aqualung, the bathyscaphe and under-water television (with incidentally its great public popularity), are coming research submarines, improvements in diving methods, automatic bouys, diving saucers and, I gather, even more bizarre machines (like FLIP and RAM).

Thus, through the combination of technology and scientific understanding of the dyanimcs of marine eco-systems, fulfillment of the ancient dream of sea fish farming will perhaps be realized in the not too distant future.

The formation of this Committee is one of the ways in which FAO is trying to meet its responsibilities in this situation. Concern for research on Marine Resources is not a new activity of FAO Fisheries Division. The Fisheries Biology Branch has for the past ten years been following a comprehensive program to promote fisheries research, as well as the application of its results to human welfare. This has in the past been effected through the Regular Program of the Organization and through the UN Expanded Program of Technical Assistance to developing nations. The new factors in the situation, which called for a reappraisal and perhaps re-orientation and expansion of this program, are the increased field activities under the UN Special Fund (as well as other kinds of technical aid now available on a broader scale); the growing number of countries conducting marine research or contemplating expansion of their sea fisheries; the expansion of national interest in oceanic exploration of all kinds; and the consequent growth of international activities in these fields - activities not only by FAO but by the other Specialized Agencies of the UN, by international (but non-governmental) bodies such as the International Council of Scientific Unions, and by new regional fisheries commissions and councils. These factors are bringing on the one hand heavier demands for action by FAO, and on the other hand, a greater complexity of relations between the many interested bodies.

FAO has always been concerned to reduce this complexity, by rationalization of these relations, and by bringing about concerted action - or even, where appropriate, the coalescence of bodies which have similar objectives. These steps are necessary both in the interests of our various Member countries, as well as to serve more effectively the needs of the scientific community. It was with this in mind that FAO originally proposed that the Intergovernmental Oceanographic Commission should be established jointly under UNESCO, FAO and other interested Specialized Agencies of the UN family. This was not at the time found acceptable. Nevertheless, we do welcome the progress made in developing practical working collaboration between FAO, UNESCO and the other Specialized Agencies concerned and in particular the designation of this Committee as the advisory body to the IOC on the fisheries aspects of oceanography.

When now you come to consider the programs of work of FAO and the requests for advice by the IOC, you will, I am sure, carefully consider the priorities which must be assigned to very many projects - all of which are perhaps technically and scientifically sound - but for which the possibilities of fulfillment are limited by the availability of funds and physical facilities and - even more critically - of trained scientists in our various Member countries. To assign priorities in this field and to formulate practicable programs, some principles and criteria need to be evolved. I should certainly hope that you would give particular attention to the development of regional activities through coordination of the work of regional organizations, such as fisheries councils and commissions - remembering that such bodies work partly by conducting international research programs themselves, and partly by acting as the media through which their Member countries plan and conduct cooperative enterprises. We in FAO have always recognized the great and fundamental contributions to marine research made in the past by certain international and regional bodies, and believe strongly in their value; and we have developed in the last few years close working relationships and arrangements with most of them. Perhaps mention might specially be made of our collaboration with the International Council for the Exploration of the Sea, the International Commission for Northwest

Atlantic Fisheries and the International Whaling Commission. We wish to improve these relations in future and at the same time bring to a new level the work of the FAO Regional Fisheries Commissions and Councils - some, like those of the Mediterranean and the Indo-Pacific, of several years standing, and others, like the Commissions for the Southwest Atlantic and Western Africa, newly established.

We believe this is the first time that leading scientists connected with virtually all the international fisheries councils and commissions have come together as a group. Thus in addition to the formal tasks of the committee collectively to advise FAO and IOC, you may find this meeting gives an opportunity for you informally to discuss some problems of mutual interest to the regional bodies. At the same time we would welcome your suggestions as to how FAO might in future best contribute to their common task of promoting the growth of fisheries science and the rational exploitation and management of the ocean's living resources.

Also of prime importance are arrangements for training fisheries scientists, and the relations between the government fisheries laboratories and the universities, museums and other academic institutions which have the responsibility not only of general scientific education but also of conducting fundamental research, much of which is now, or will in future be, highly relevant to fisheries science. In this, cooperation between FAO and UNESCO is fundamental.

A third important aspect, especially of international work in this field, is the dissemination of scientific results. You will find this given considerable emphasis in the FAO program. Such activity is particularly appropriate to the regular work of our Organization. The program has been built up almost, one might say, as a pilot study, in the provision of documentation and intelligence services, on the assumption that such services - involving work on bibliographies and newsletters, synopses and critical reviews of data and of scientific techniques and instruments, directories of scientists and of scientific institutions, and actions to improve scientific publications and their availability where they can be used, - this service should be created as an integrated whole. Further, such a service, even though one organization may, and necessarily does, take the lead, can only be successful through the willing cooperation of other bodies, institutions and interested scientists.

My intention in making these few remarks has been to indicate the broad questions which at present preoccupy us, and to give some examples of particular problems. I believe the magnitude of these problems, and the present growth of interest in them throughout the world, fully justify the creation of this new committee of eminent scientists, and I am confident that your expert advice to FAO and to the IOC will greatly help the accomplishment of the tasks before us. In declaring open this First Session of the Committee, I therefore wish you a successful meeting, and, I hope, a happy stay in Rome.

ANNEX III

STATUTES OF THE ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH

Article I - TERMS OF REFERENCE

1. The Director-General of the Food and Agriculture Organization of the United Nations (FAO) acting in pursuance of the decision of the Eleventh Session of the FAO Conference (para. 233 of the Report of the Session) has established, under Article VI, paragraph 2 of the FAO Constitution, the Advisory Committee on Marine Resources Research (hereafter referred to as "the Committee") to study and advise the Director-General on the formulation and execution of the Organization's Program of Work concerned with the research on marine fisheries resources (including work on research vessels, biological statistics, training of fisheries scientists and related matters) and the dissemination, interpretation and application of the results of such research, special attention being paid to the fisheries aspects of oceanographic research.

2. By agreement of the Director-General and in accordance with Resolution 15 adopted at the Second Session of the Intergovernmental Oceanographic Commission (hereafter referred to as "IOC") under UNESCO, the Committee will also act as the advisory body to that Commission on the fisheries aspects of oceanography.

Article II - COMPOSITION

1. The Committee shall be composed of not more than fifteen fisheries experts appointed in their personal capacity by the Director-General of FAO for a period of one year and eligible for reappointment. The Members shall be selected on the basis of their expert knowledge, after consultation with governments and intergovernmental and other bodies of Member countries concerned with fisheries research, account being taken of the need for regional and subject representation.

2. For the purpose of Article I, paragraph 1 above, the Committee shall be composed of not more than thirteen members.

3. For the purpose of Article I, paragraph 2 above, the Committee shall be augmented by two additional members from countries not members of FAO, appointed by the Director-General on the basis of nominations by the Bureau of IOC, in accordance with the terms of Resolution 15 referred to in Article I, paragraph 2 above.

Article III - REPORTS

The Committee shall report and make appropriate recommendations to the Director-General, who will bring the Committee's recommendations having policy, program, or financial implications for the Organization, to the attention of the Conference or Council, and will ensure appropriate circulation of the Committee's findings and recommendations.

Article IV - SUBSIDIARY BODIES

The Committee may establish such subsidiary bodies as it deems necessary for the accomplishment of its tasks, subject to the availability of the necessary funds in the relevant Chapter of the approved Budget of the Organization.

Article V - RULES OF PROCEDURE

The Committee may adopt and amend its own Rules of Procedure which shall come into force upon approval by the Director-General, subject to confirmation by the Conference or Council of the Organization, as appropriate.

Statutes as put into force by the Director-General of FAO.

ANNEX IV

RULES OF PROCEDURE

Rule I - FUNCTIONS

The Advisory Committee on Marine Resources Research (hereafter referred to as "the Committee") shall exercise the functions defined in Article I of its Statutes.

Rule II - MEMBERSHIP

The Committee shall consist of experts appointed in their individual capacity by the Director-General of the Organization in accordance with Article II of the Statutes of the Committee.

Rule III - OFFICERS

1. The Committee shall elect at each of its sessions a Chairman, and two Vice-Chairmen, from among its members, who shall remain in office until the election of new officers.

2. The Chairman, or in his absence, one of the Vice-Chairmen, shall preside at meetings of the Committee and exercise such other functions as may be required to facilitate its work. In the event of the Chairman and the Vice-Chairmen not being able to preside at a meeting, the Committee shall appoint one of its members to act as Chairman.

3. One of the Vice-Chairmen shall be designated to act as Rapporteur to the Committee.

4. The Director-General shall appoint a Secretary from among the staff of the Organization who shall be responsible to him and shall perform such duties as the work of the Committee may require and prepare, in consultation with the Rapporteur, a record of the proceedings of the Committee.

Rule IV - SESSIONS

1. The Committee shall meet annually, as a rule, or at such other intervals as may be determined by the Director-General in consultation with the Chairman.

2. Any number of separate meetings may be held during each session of the Committee.

3. The sessions of the Committee shall be held normally at the Headquarters of the Organization, but may be convened at other locations by the Director-General after consultation with the Chairman of the Committee.

4. Notice of the date and place of each session shall be communicated to all members of the Committee and to organizations invited to designate representatives or observers ordinarily at least two months in advance.

5. The presence of a majority of members of the Committee entitled to vote shall constitute a quorum for any formal action taken by the Committee.

6. Meetings of the Committee shall be held in private, unless otherwise decided by the Committee.

7. For any matters not covered by these Rules, the proceedings of the Committee shall be governed by the relevant provisions of the General Rules of the Organization.

Rule V - OBSERVERS

1. Participation of international organizations in the work of the Committee, and the relations between the Committee and such organizations, shall be governed by the relevant provisions of the Constitution and the General Rules of the Organization as well as by the principles governing relations with international organizations, as adopted by the Conference or Council of the Organization. All such relations shall be dealt with by the Director-General of the Organization. Any invitation to an inter-governmental organization to be represented at a session of the Committee shall be issued by the Director-General after consultation with the Chairman of the Committee.

2. International organizations invited to designate representatives or observers may submit memoranda on any item on the agenda of the Committee. The representatives or observers of such organizations may attend the meetings of the Committee and, subject to any agreements conluded by FAO with the organizations concerned and to the provisions of the Constitution and General Rules of FAO, may, with the approval of the Chairman, participate in the discussions.

Rule VI - AGENDA AND DOCUMENTS

1. The Director-General, after consultation with the Chairman of the Committee and with the President of IOC, shall prepare a provisional agenda and circulate it ordinarily at least one month in advance of the session to all members of the Committee and to international organizations invited to attend.

2. Any member of the Committee may propose the insertion of additional items in the provisional agenda. The Director-General shall thereupon circulate the proposed item to the members of the Committee and to organizations invited to participate, together with the appropriate documentation.

3. The Committee in session may amend the agenda by the deletion, addition or modification of any item, provided that no matter referred to it by the Director-General, or by IOC may be omitted from the agenda. Any documents for consideration by the Committee which have not previously been circulated shall be dispatched with the provisional agenda, or as soon as possible thereafter.

Rule VII - VOTING

1. The opinion of the Committee shall be ascertained by the Chairman. Upon the request of one or more members of the Committee, the Chairman shall put to a vote, in which case the pertinent provisions of Rule XII of the General Rules of the Organization shall apply *mutatis mutandis*.

2. Each member of the Committee shall have one vote.

Rule VIII - RECORDS AND REPORTS

1. The Committee shall submit to the Director-General a full report on each session which shall embody its views, recommendations and decisions including, when appropriate, statements of minority views.

2. The conclusions and recommendations of the Committee, transmitted to the Director-General of the Organization, at the close of each session, shall be circulated by the Director-General to Members of the Committee, the IOC, and to other international organizations that were invited to participate in the Session, and, upon request, to Member Nations and Associate Members of the Organization.

3. Such records and summaries of proceedings as the Committee may decide, shall be maintained and circulated to the members of the Committee and to other participants in the meetings.

4. The Director-General, in consultation with the Chairman, shall determine the procedures in regard to Press communiqués concerning the activities of the Committee.

Rule IX - SUBSIDIARY BODIES

1. The Committee may establish sub-committees on problems of major importance and general interest or working parties for the study of problems of a more specialized nature.

2. The Committee shall determine the terms of reference and reporting procedures of its subsidiary bodies.

3. The subsidiary bodies shall consist of selected members of the Committee, and, if appropriate, other experts; the designation of members of subsidiary bodies shall be made by the Director-General on the basis of recommendations of the Committee.

4. The establishment of any subsidiary bodies and the convening of meetings of such bodies shall be subject to the availability of the necessary funds in the relevant Chapter of the approved budget of the Organization. The determination on the availability of funds shall be made by the Director-General. Before taking any decision involving expenditure in connection with the establishment or convening of subsidiary bodies, the Committee shall have before it a report from the Director-General on the administrative and financial implications thereof.

Rule X - AMENDMENT AND SUSPENSION OF RULES

1. Amendments to these rules may be adopted by a two-thirds majority of the membership of the Committee, provided that 24 hours notice of the proposal for the amendment has been given. Amendments to these rules shall come into force upon approval by the Director-General, subject to confirmation by the Conference or Council of the Organization, as appropriate.

2. Any of the above rules of the Committee, other than rules I, II, III-4, VI-3, VII, VIII-1, 2, IX-4, X may be suspended by the Committee by a two-thirds majority of the votes cast, provided that 24 hours notice of the proposal for the suspension has been given. Such notice may be waived if no member of the Committee objects.

ANNEX V

LIST OF INFORMATION PAPERS

ACMRR/1/INF.1	Basic Texts, Vols. 1 and 2.
ACMRR/1/INF.2	Report of the Director-General on Agency Relations and Consultations (C 61/19).
ACMRR/1/INF.3	Program of Work and Budget for 1962/63 (C 61/3), plus Sup. 1 and Sup. 2 (Rev. 1).
ACMRR/1/INF.4	Report of the Eleventh Session of the Conference.
ACMRR/1/INF.5	Summary of work proposed for the Fisheries Division for 1962/63 (called "Director - Office of the Director").
ACMRR/1/INF.6	A Developing Aquatic Sciences Information Retrieval System by Joel S. O'Connor and Saul B. Saila, plus "Current Bibliography for Aquatic Sciences and Fisheries" leaflet.
ACMRR/1/INF.7	Fisheries Oceanography by D.H. Cushing.
ACMRR/1/INF.8	Considerations on Fishery Oceanography by Z. Popovici.
ACMRR/1/INF.9	Report on the Second Session of the Commission, Intergovernmental Oceanographic Commission.
ACMRR/1/INF.10	Oceanography Program of the Smithsonian Institution with Special Reference to the National Sorting Center.
ACMRR/1/INF.11	Documents concerning the International Biological Programme, plus Sup. 1 and Sup. 2.
ACMRR/1/INF.12 (restricted)	Draft Program of Work and Budget 1965/65 (FAO Director's Office and Biology Branch).
ACMRR/1/INF.13	Recent correspondence between IOC and FAO concerning ACMRR.
ACMRR/1/INF.14	Statutes of the Advisory Committee on Marine Resources Research.
ACMRR/1/INF.15	Proceedings of the World Scientific Meeting on the Biology of Tunas and Related Species.
ACMRR/1/INF.16	The Intelligence Service for Aquatic Sciences and Fisheries provided by the Food and Agriculture Organization of the UN.
ACMRR/1/INF.17	Proceedings of the World Scientific Meeting on the Biology of Sardines and Related Species. Report.
ACMRR/1/INF.18	Various Documents concerning the Comprehensive Program for World Ocean Study.

ACMRR/1/INF.19	Comments on Fishery Oceanography prepared for the Working Party on Fishery Oceanography of the Scientific Committee on Oceanic Research of the International Council of Scientific Unions.
ACMRR/1/INF.20	Preparation of Regional Fisheries Oceanographic Synopses prepared by Biology Branch, Fisheries Division, FAO.
ACMRR/1/INF.21	Extract from Report of the Secretary-General of the UN Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, on Fishery Resources.
ACMRR/1/INF.22	Reprint of: Publication of Proceedings of Conferences and Symposia, by Sir Lindor Brown, C.B.E., Sec. R.S. (Nature, February 24 1962).
ACMRR/1/INF.23	Summary of Recommendations related to Marine Sciences contained in Reports of Regional Fisheries Commissions and Councils connected with FAO.
ACMRR/1/INF.24	Report of the ICNAF Working Group of Scientists on Fishery Assessment in relation to regulation problems.
ACMRR/1/INF.25	FAO Fisheries Biology Synopses.
ACMRR/1/INF.26	Requirements and Improvement of Fishery Statistics in the North Atlantic Region.

ANNEX VI

LIST OF WORKING PAPERS

ACMRR/1/WP.1	Provisional Agenda.
ACMRR/1/WP.2	Provisional Rules of Procedure.
ACMRR/1/WP.3	World Meetings of the Biology of Species and Stocks, prepared by FAO Fisheries Division, Biology Branch.
ACMRR/1/WP.4	Notes on Technical Assistance in the Field of Fisheries, prepared by FAO Fisheries Division, Director's Office.
ACMRR/1/WP.5	Fisheries Aspects of Oceanography, prepared by the Secretariat of the Intergovernmental Oceanographic Commission.
ACMRR/1/WP.6 (Rev. 1)	Revised List of Participants.
ACMRR/1/WP.7 (Rev. 1)	List of Information Papers.
ACMRR/1/WP.8 (Rev. 1)	List of Working Papers.
ACMRR/1/WP.9	Comments on ACMRR Agenda by Dr. G.F. Humphrey, President of SCOR.
ACMRR/1/WP.10	Note on Special Fund Assistance in the Field of Fisheries, prepared by FAO Fisheries Division, Director's Office.
ACMRR/1/WP.11	Notes on the Identification of Sub-populations of Fish by Serological and Biochemical Methods, the Status of Techniques and Problems of Their Future Application, by B.B. Parrish.
ACMRR/1/WP.12	Some Notes on the Types of Instruments for Observing Marine Fish and Their Behaviour under Natural Conditions, Their Characteristics, Current Research to Develop Them, and Problems Regarding Their Use and Application, by B.B. Parrish.
ACMRR/1/WP.13	Introductory Address by Dr. Norman Wright, Deputy Director-General of FAO.
ACMRR/1/WP.14	Long-term Programme of World Fishery Oceanography, by Prof. M. Uda.
ACMRR/1/WP.15	FAO Program in Fishery Statistics, prepared by Economics and Statistics Branch, Fisheries Division.
ACMRR/1/WP.16	International Biological Programme Planning Committee request for the formation of a working group to plan and develop international programmes on the biological productivity of communities throughout the oceans, including littoral regions.
ACMRR/1/WP.17	Fisheries Division Work on Research Vessels (Current Biennium and 1964/1965) prepared by Technology Branch.

ANNEX VII

LIST OF PARTICIPANTS

Members

Dr. Victor Angelescu	División de Biología Animal y Vegetal Facultad de Ciencias Exactas y Naturales Universidad de Buenos Aires Florida 656, 3er piso Buenos Aires, Argentina
Mr. Vernon E. Brock	Director, Biological Laboratory Bureau of Commercial Fisheries U.S. Dept. of the Interior Washington 25, D.C., U.S.A.
Dr. Miljenke Buljan	Institut za Oceanografiju i Ribarstvo Post. Pret. 114 Split, Yugoslavia
Dr. Wilbert McLeod Chapman	President, Van Camp Foundation 739 Golden Park Avenue San Diego 6 California, U.S.A.
Dr. David Cushing	Ministry of Agriculture, Fisheries and Food Fisheries Laboratory, Lowestoft Suffolk, England
Dr. Jean Furnestin	Directeur, Institut Scientifique et Technique des Pêches Maritimes 59 Avenue Raymond-Poincaré Paris XVI, France
Dr. Cyril Lucas	Director of the Marine Laboratory Dept. of Agriculture and Fisheries for Scotland Victoria Road, Torry Aberdeen, Scotland
Dr. Ramon Margalef	Instituto de Investigaciones Pesqueras Universidad de Barcelona Paseo Nacional S/N Barcelona (3), Spain

Members (continued)

Dr. A.W.H. Needler	Director, Fisheries Research Board of Canada Pacific Biological Station P.O. Drawer 100 Nanaimo, B.C., Canada
Dr. N.K. Panikkar	Director, Indian Programme Indian Ocean Expedition Council of Scientific and Industrial Research New Delhi, India
Dr. Henri Rotschi	Institut Français d'Océanie Office de la Recherche Scientifique et Technique Outre-Mer Boîte Postale No. 4 Nouméa, Nouvelle Calédonie
Dr. Gunnar Rollefsen*	Director, Institute of Marine Research Bergen, Norway
Prof. Michitaka Uda	Tokyo University of Fisheries Shiba Kaigan-dori Minato-ku Tokyo, Japan

Representatives of International Organizations

Dr. Warren Wooster	UNESCO and IOC Director, Office of Oceanography Department of Natural Sciences UNESCO 2 Place de Fontenoy Paris VII, France
Dr. T.R. Parsons	UNESCO Office of Oceanography Department of Natural Sciences UNESCO 2 Place de Fontenoy Paris VII, France
Mr. G. Tait	IAEA Division of Health, Safety and Waste Disposal IAEA Kaerntnerring Vienna 1, Austria

*Dr. Rollefsen was unable to attend the First Session of ACMRR.

Food and Agriculture Organization

Dr. Norman C. Wright	Deputy Director-General
Mr. F.E. Popper	Deputy Director, Fisheries Division
Mr. S.J. Holt	Chief, Fisheries Biology Branch
Mr. H. Rosa, Jr.	Chief, Marine Resources Section, Fisheries Biology Branch
Mr. J.G. Simpson	Biologist, Marine Resources Section, Fisheries Biology Branch
Dr. M. Ruivo	Chief, Research Programs Section, Fisheries Biology Branch
Mr. E. Akyüz	Biologist, Research Programs Section, Fisheries Biology Branch
Mr. L.P.D. Gertenbach	Chief, Statistics Section, Fisheries Economics Branch
Mr. R.S. Glover	Fisheries Biology Branch Consultant

Secretariat of the Committee

Dr. M. Ruivo	Secretary of the Committee

Assisted by: Dr. G. Ruess
Miss S. de Friston
Mrs. H. Montaner
Miss E. Malcolm
Miss G. Misserville

ANNEX VIII

CONCLUSIONS AND RECOMMENDATIONS

Rec. 1 - Statistics and other records for conservation purposes
Rec. 2 - The Role of scientific working groups
Rec. 3 - The Fisheries Division Regular Program and its relation with field programs
Rec. 4 - Intelligence on current research activities
Rec. 5 - Standardization and intercalibration of methods and instruments
Rec. 6 - Systematics of marine organisms and synopses
Rec. 7 - World scientific meetings
Rec. 8 - Guide lines on education and training, and on the establishment, orientation and priorities of fisheries research programs
Rec. 9 - Catch, fishing effort and biological statistics
Rec. 10 - Comprehensive program for world ocean study
Rec. 11 - International Indian Ocean Expedition
Rec. 12 - International investigations in northern oceans
Rec. 13 - International Cooperative Investigations of the Tropical Atlantic
Rec. 14 - South Atlantic Cooperative Investigations
Rec. 15 - Rapid utilization of synoptic oceanographic data and fixed oceanographic stations
Rec. 16 - Data exchanges
Rec. 17 - International Biological Programme
Rec. 18 - Stimulating and assisting research in particular fields
Rec. 19 - Second Session of Committee
Rec. 20 - Officers of the Committee
Rec. 21 - Distribution of report

RECOMMENDATION 1

(Agenda Items 6, 7, 8.8 and 9)

Statistics and other records for conservation purposes

The Committee gave special attention to the unprecedented and accelerating growth of fisheries in the world ocean and recognized that only a portion of international waters is within the jurisdiction of established international fishery conservation agencies (ACMRR/1/INF.15, 26 and WP.15). It pointed out the inadequacy, for purposes of conservation, of the records of many fisheries, especially those prosecuted at a great distance from home ports. In the absence of adequate records, the danger exists that sustainable levels of harvest for some stocks may be exceeded without this being detected at an early stage.

The Committee noted that the sense of the UN Convention on Fishing and Conservation of the Living Resources of the High Seas was that a responsibility for the primary collection and compilation of such records rests with the nation whose fishermen harvest the stocks in question, except in certain special cases where other provisions have been made. Many of these fisheries involve fishermen of several nations but the records must be compiled primarily with respect to the unity of the fished stocks rather than of the nationality of the fishermen. The Committee therefore recommends that FAO:-

(a) explore the means of stimulating nations to institute the collection of adequate records as the basis for the management of international fisheries not now the special responsibility of international agencies;

(b) compile and publish such records so far as practicable on the basis of the exploited stocks or, where this is not possible, by regional or areal subdivisions as seems appropriate for this purpose, and compare these statistics with those compiled by other established agencies;

(c) seek to stimulate the establishment of new international agencies or the extension of the jurisdiction of existing ones where the substantial character of the fisheries and the problems of conserving them require and justify the formulation of management programs to maintain their yields.

RECOMMENDATION 2

(Agenda Items 6, 7 and 13)

The Role of scientific working groups

(a) to promote international cooperative programs in the field of marine resources research, it is essential to ensure that small working groups of the scientists directly concerned with

the development and execution of those programs have the possibility of meeting together as occasion demands. This is true of proposals arising both from meetings of Regional Fisheries Councils and Commissions and also from the work of this Committee.

It is important to draw the attention of member governments, institutions, and individual scientists to the valuable results which have been obtained in recent years in the assessment of fisheries resources by such ad hoc working groups of specialists; one recent example in this respect is the Report of the ICNAF Working Group of Scientists on Fishery Assessment in Relation to Regulation Problems (ACMRR/1/INF.24).

The Committee therefore recommends that the secretariat take the necessary steps to ensure wide familiarity with this and other such reports outside the regions in which the work was carried out.

(b) The costs of such working groups are variously met, according to the nature of the problem and the mechanism established to deal with it. In the case of regional fisheries bodies not dependent on FAO this has been done either by the member governments of those bodies covering the costs of their own participants or by establishing an international fund for each specific purpose. The Committee noted with approval the frequent participation in recent years of competent members of the FAO Staff in the working groups of a number of such bodies. In the case of the FAO bodies, the need has on occasion been met through the organization of seminars under the EPTA regional program (ACMRR/1/WP.4).

The Committee recommends that continued use be made when appropriate of the EPTA for such purposes.

(c) The Committee further recommends that, with regard to the work of Special Fund projects on marine resources research (ACMRR/1/WP.10), provision be made in their budgets for the participation of relevant scientists in such working groups as may become necessary in view of the international nature of their tasks; this is especially important where several such projects operate in neighbouring countries and are concerned with studies of the same or closely related stocks.

(d) There is also a need for speed of action and flexibility in establishing scientific working groups associated with FAO Fisheries Division, with this Committee and with FAO Regional Fisheries Councils and Commissions, which can be met by providing adequate funds in the Regular Program budget of the Organization. The Committee therefore commended the suggestion that the Director-General might consider making special provision in his proposed Program of Work for the next biennium for an expansion of the activities of the Organization in the evaluation of the development potentials of marine resources within the context of a major expansion of work on development planning.

(e) The Committee observed that actions under (b), (c) and (d) above could contribute substantially to the strengthening of the work of the regional bodies to which the Deputy Director-General referred in his Introductory Address to the Committee; it would also, however, add to the burden of responsibility on these bodies to determine priorities for their actions in this field and to define precisely the tasks of any working groups which might be established to prepare and carry out those actions (ACMRR/1/INF.23). The Committee therefore recommends that it be kept informed of such proposed actions particularly so that, in considering its own work, it can take account of regional activities which are of broader and even world-wide interest or significance.

RECOMMENDATION 3

(Agenda Items 6 and 7)

The Fisheries Division Regular Program and its relations with field programs

(a) The Committee discussed, at some length, the budgetary and personnel problems of the Fisheries Division, with special reference to the effect of the Expanded Program of Technical Assistance, and of the Division's part in the initation and supervision of UN Special Fund projects, on its long-term Regular Program (ACMRR/1/INF.12 and WP. 4, 10). It emphasized the importance of the Division's basic long-term program and is concerned over the danger of it being damaged by diversion of effort to the shorter-term Technical Assistance and Special Fund projects. The Committee believes that additional funds and properly qualified personnel are needed for the regular long-range program alone. It notes that the initiation of the Special Fund projects requires much effort by the Division's staff before additional funds become available, that there is some unavoidable waste effort on projects which are not eventually undertaken, and that difficulties are caused by lack of synchronization and other administrative complexities. The Committee recommends that every effort be made to provide the Division with the additional resources in funds and personnel which the magnitude of the work of arranging and supervising Special Fund projects demands. The Committee further points out that the great unused potential and present rapid development of fisheries warrants increased emphasis on the work of the Fisheries Division within FAO's work as a whole and reversal of the trend indicated by the decreasing proportion of FAO's total funds expanded on fisheries in the last few biennia.

RECOMMENDATION 4

(Agenda Item 8.1)

Intelligence on current research activities

The Committee reviewed all aspects of the work of the FAO Fisheries Division on information services concerning current marine resources research (ACMRR/1/INF.4, 5, 6, 12, 16 and WP.9) and expressed the following opinions:

(a) the Committee believes that the Current Bibliography for Aquatic Sciences and Fisheries is very useful for the development of research on marine resources and that this project should be continued and extended to give complete coverage of marine science of interest to such development. It recommends close cooperation with other interested Agencies, especially UNESCO and the IOC, in order to obtain complete bibliographic coverage of marine science, uniformity of coding to permit combined use of all sections, and joint support.

(b) The Committee noted with approval the forthcoming joint publications by FAO and UNESCO of a newsletter entitled International Marine Science. It recommends a broad distribution of the newsletter making use of the facilities of regional and international bodies as well as national authorities to reach parties to whom it will be useful. In this connection the potential value of the newsletter to isolated institutions and individual scientists is stressed.

(c) The Committee agreed that annual reviews of advances in marine sciences would be very useful but recognized the great effort involved in producing such reviews, the difficulty of enlisting the services of the highly qualified scientists who along can produce them and the possibility of duplication with reviews produced by other public or private agencies. It recommends that the Secretariat report to the Second Session of the Committee on this subject with special reference to the need for and feasibility of active participation by FAO in the production of annual reviews.

(d) The Committee commends the Fisheries Division for the volume and quality of its reference papers on marine resources and on their development and harvesting. The Committee recommends active continuation of this valuable work.

RECOMMENDATION 5

(Agenda Items 8.3,9,11.8 and 13)

Standardization and intercalibration of methods and instruments

The need for the standardization and intercalibration of methods and instrumentation in research on living marine resources was discussed in some detail, with special reference to ACMRR/1/INF.12 and WP.9 and 12. The

Committee recognizes the parallel interest of IOC, ICES, other regional fisheries councils, commissions and other agencies in these aspects of their research (which are in some instances identical). FAO Fisheries Division is especially interested in measurements of the abundance of fish (standing crop, potential production, etc.) but also in all measures of production, from the primary level to the fish, their food, competitors and predators, and the effects of their environment and of fishing processes on these. Distinctions are drawn between intercalibration, the use of reference "standards" with which comparisons might be made, and "standardization" of methods and instruments which might, if premature, hinder very necessary improvements in evaluation.

The first priority is undoubtedly in ensuring comparability of data obtained by diverse methods through intercalibration (perhaps by the adoption of some "standard"), so that the maximum use might be made of the data being secured over a wide field.

The efforts being made by the Division in this respect with reference to the measurements of fish lengths and of net meshes for the purposes of stock assessment were noted, and attention was drawn to the fact that the Symposium on Fish Stock Abundance being convened by ICES would provide further information pertinent to the intercalibration of both indices and absolute measures of stock abundance. Particular attention was called to the rapidly developing techniques for direct estimation of fish abundance using echo-sounders.

When particular methods and instruments become widely accepted then standardization might be recommended but this should not be done prematurely.

The Committee recommended that FAO continue its review of these important matters in the light of the Committee's views and of work proceeding elsewhere, and that the Secretariat report further to the next meeting. The report, which should be prepared in consultation with Dr. Cushing and with Mr. Parrish (the author of ACMRR/1/WP.12) should include consideration of the needs for specification of the methods and gears used in exploratory fishing operations and of the data collected, with a view to the eventual comparability and interpretation of the results obtained.

RECOMMENDATION 6

(Agenda Items 8.4,8.5 and 9)

Systematics of marine organisms and synopses

The Committee noted the valuable efforts of the Division, in close cooperation with UNESCO, to encourage work on the systematics of marine organisms and the desirability of encouraging an appropriate agency to maintain a complete list, using punch cards, of aquatic organisms.

The Committee believes that the cooperative production of synopses of scientific information on species of useful marine organisms is very desirable (ACMRR/1/INF.25). It notes with approval the valuable part played by FAO Fisheries Division in designing standard format and contents for synopses

and also notes the stimulus for their preparation associated with world conferences such as those on tunas and sardines.

The Committee recommends that the Division continue to play an active part in the encouragement and coordination of the production of synopses and that in so doing it should commend this project to directors of research stations and institutes. The Committee further recommends that the production of synopses on oceanography be proceeded with as a means of making oceanographic information more readily available for application to fisheries problems, and that the Division work to this end in close cooperation with regional fisheries bodies and other Agencies and organizations (ACMRR/1/INF. 20).

RECOMMENDATION 7

(Agenda Item 8.6)

World scientific meetings

The value of world meetings on subjects of general and important interest to fisheries, such as those recently held on tunas and on sardines was discussed at some length, (ACMRR/1/INF.4, 15, 17, 22 and WP.3). The Committee agreed that they contributed usefully to the interchange of information, the preparation of reviews of the state of knowledge on the subject concerned, and communication and cooperation between scientists. The Committee stresses, however, that the objectives and subjects of such conferences should be defined as precisely as possible, and that the subjects should be carefully selected, with the help of regional bodies. The Committee recommends that the next world conference sponsored by FAO in the field of marine resources research should be on some aspect of the effects of environment on the abundance and distribution of fish populations, and that it be held in the 1966-67 biennium. In order to make a firmer and more precise recommendation on the subject matter at its next meeting, the Committee recommends that the Fisheries Division prepare a working paper for its consideration.

RECOMMENDATION 8

(Agenda Items 8.7,14.2 and 14.3)

Guide lines on education and training, and on the establishment, orientation and priorities of fisheries research programs

The Committee paid special attention to a number of questions raised by the Secretariat relating to education and training, the relations between academic and fisheries research units and problems of assisting the establishment of research programs in developing countries, (ACMRR/1/INF.12). The great importance of education and training of professionals in particular was stressed and the Committee recommends that the Secretariat produce a review covering all aspects of this subject for its next Session.

Concerning the merits of fishery research units, especially in developing countries, being based on universities to compensate for their possible relative scientific isolation, the disadvantages of isolation were appreciated but the Committee felt that it was impossible to generalize, conditions varying greatly from place to place.

Particular attention was given to the often very difficult decisions which must be faced when trying to establish research projects on an effective basis with all too limited facilities and staff. The Committee agreed that in any developing fishery the first objective is to secure adequate data regarding available stocks and the early effects of fishing on them. These are essential for rational fisheries management including estimating the level to which the fishery may be developed safely, a feature to which increasing study must be given.

The Committee recommends that the Division's present policy of giving priority, in marine resources research projects, to stock assessment should be maintained.

RECOMMENDATION 9

(Agenda Items 8.8,9 and 11.2)

Catch, fishing effort and biological statistics

Statistics of catches and relevant data concerning fishing effort and biological characteristics of the stocks are fundamental to all marine resources investigations and these subjects arose for discussion at various points during the session (ACMRR/1/INF.15 and WP.15). Discussion centred on: (i) the need to be fully informed about new and often rapidly developing fisheries and (ii) the reports presented by the Secretariat on the present status of statistics compilation and reporting by FAO. The Committee commends and approves the various steps already taken, particularly those in collaboration with regional bodies with the object of simplifying, standardizing and improving fishery statistics, and others being planned. In particular, attention was focussed on the current problems concerning the rapid rise of new fisheries. (See also Recommendation 1).

The Committee recommends that:

(a) FAO further the collection, with the assistance and cooperation of local fishery bodies, of improved fishery statistics along the lines recently agreed with ICES (and in process of negotiation with ICNAF) through the services of the Continuing Working Party on Fishery Statistics in the North Atlantic Region;

(b) specific requests be put by FAO to the various countries now developing new and substantial long-range fisheries (i.e., France, Germany, Greece, Israel, Japan, Italy, Norway, Poland, Portugal, Spain, U.K., U.S.A., and U.S.S.R.) for such statistics not reported to regional bodies for 1962 and subsequent years, these requests being for as detailed statistics as they can supply (particularly of catch, effort and fishing ground) of their fishing by demersal

and pelagic trawl, and for scombroid fishes irrespective of gear, with a view to a report being prepared for consideration by the Committee at its second session;

(c) FAO examine and report on the statistics being specially requested under IOC for the region of the International Indian Ocean Expedition (ACMRR/1/INF.9:Res.5);

(d) FAO prepare and despatch to each member country a questionnaire concerning that country's systems and facilities for collection of fishery statistics;

(e) the Continuing Working Party on Fishery Statistics in the North Atlantic Region be requested to consider at its forthcoming session the possible value of extending the improvements and standardizations already being achieved in the North Atlantic to other regions, with appropriate representation.

RECOMMENDATION 10

(Agenda Items 10,11.1 and 13)

Comprehensive program for world ocean study

The Committee considered the various documents concerning a comprehensive program for world ocean study (ACMRR/1/INF.7, 8, 9, 18 and WP.14) and Resolution 2 on this subject adopted by the IOC at its second session (ACMRR/1/INF.9 and 18). It was agreed that the Committee should be closely associated with SCOR and IOC in the formulation of the General Scientific Framework (GSF) for world ocean study so as to ensure adequate attention to biological and fisheries aspects of general oceanographic investigations.

The Committee recommends that:

(a) the Secretariat keep the Regional Fisheries Councils and Commissions and other relevant bodies and institutions informed about these developments;

(b) funds be provided for a member of the Secretariat to attend the next meeting of the SCOR proposed to be held at Halifax in April 1963, at which this subject will be examined in detail.

The Committee established a Working Group to:

(i) formulate the fisheries oceanography requirements under GSF;

(ii) keep liaison with SCOR, IOC, UNESCO and other International Organizations concerned with the program of world ocean study, and

(iii) report to the Committee at its next meeting.

The Committee recommends that the members of this Working Group be Dr. D. Cushing (Convener), Dr. N.K. Panikkar, Dr. H. Rotschi and Mr. S.J. Holt (or alternate) and that facilities be made available for them to meet as necessary.

RECOMMENDATION 11

(Agenda Item 11.2)

International Indian Ocean Expedition

The Committee considered the present status of the International Indian Ocean Expedition (IIOE) as reported by the Secretary of IOC and, in view of the need to secure maximum benefits in the field of fisheries from the IIOE welcomed the decision of the IOC to authorize its Secretary to appoint a subject leader in the field of fisheries oceanography. The Committee was informed that Dr. D.N.F. Hall would shortly be taking up this assignment.

In order that the Committee be kept fully informed of the progress of the IIOE, particularly on subjects pertinent to fisheries, the Committee appointed Dr. N.K. Panikkar as Special Rapporteur to the Committee on the IIOE. It recommends that IOC be requested to arrange that the Committee's Secretary and the Special Rapporteur be kept informed of Dr. Hall's activities, and that he visit FAO Headquarters for this purpose.

RECOMMENDATION 12

(Agenda Item 11.3)

International investigations in northern oceans

The Committee noted the Resolutions 6, 12 and 13 adopted by the Second Session of IOC, concerning international investigations in the Northern Atlantic and Pacific Oceans, and discussed each in relation to fishery objectives (ACMRR/1/INF.9 and 23). It observed that FAO was closely in touch with the Environmental Survey planned by ICNAF for the Spring of 1963.

The Committee decided that the IOC resolutions concerning international synoptic investigations in the Atlantic and Pacific Oceans and the Cooperative Study of the Kuroshio and adjacent regions be included, as regards their potential value for fisheries research, in the terms of reference given to the Working Group established under the Committee's Recommendation 9 on world ocean study.

It recommended that the potential value of the Kuroshio program to marine resources research be drawn to the attention of the Indo-Pacific Fisheries Council which should be urged to support it. The Committee appointed Prof. M. Uda as Special Rapporteur.

RECOMMENDATION 13

(Agenda Item 11.4)

International Cooperative Investigations of the Tropical Atlantic

The Committee considered the information available on the International Cooperative Investigations of the Tropical Atlantic (ICITA) and recognized their great potential value for marine resources research in that region (ACMRR/1/INF.9 and 23).

The Committee recommends that FAO urge the relevant governments both within and outside the area to give all possible assistance to these investigations and to endeavour to ensure that provision be made in the plans of operation of relevant Special Fund projects in the area for appropriate cooperation.

The Committee appointed Mr. Vernon Brock as Special Rapporteur.

RECOMMENDATION 14

(Agenda Item 11.5)

South Atlantic Cooperative Investigations

During consideration of the investigations by Argentina, Brazil and Uruguay in the South Atlantic (IOC 2nd Session, Res. 11), the Committee noted with appreciation the developing plans for scientific cooperation of national institutions and countries in that area (ACMRR/1/INF.9 and 23).

The Committee recommends that all interested countries be urged to support and develop this cooperative investigation, particularly on the biological side and that with this object in view, the South-West Atlantic Fisheries Advisory Commission be advised of the value of setting up a group for further coordination, in the hope that eventually the investigations might be extended to cover the whole area. The Committee appointed Dr. V. Angelescu as Special Rapporteur.

RECOMMENDATION 15

(Agenda Items 11.6,11.7 and 13)

Rapid utilization of synoptic oceanographic data and fixed oceanographic stations

Among the items on which IOC had requested advice and comments from the Committee were the rapid utilization of synoptic oceanographic data and on the use of fixed oceanographic stations (ACMRR/1/INF.9:Res. 14,17).

participation of all types of institutions concerned with marine science. The Committee also observed that the IBP in its marine aspects should be considered in the context of the General Scientific Framework for the comprehensive study of the world ocean.

The Committee therefore recommends the appointment of two scientists to the joint working group proposed by the IBP Planning Committee and suggests that the FAO representative to the forthcoming meeting of SCOR should commend similar action to that body. It is recommended that the two members to be nominated by the Director-General be Dr. N.K. Panikkar and Dr. D. Cushing, both of whom have also been proposed as members of the Working Group established by the Committee in relation to the preparation of the GSF. It is expected that the joint Working Group may need to meet during this biennium and it is recommended that funds be provided for the two ACMRR members to participate. The Committee agrees with the proposal of the IBP Planning Committee that the joint Working Group should prepare and submit proposals to the Planning Committee, SCOR, ACMRR, the interested UN Agencies (UNESCO, WMO, IAEA and FAO) and other competent organizations for their further advice and consideration of ways and means by which they may give the IBP programs in the marine field their practical support and assist in their implementation.

The Committee pointed out that many theoretical problems concerning the dynamics of aquatic (including marine) communities can be studied in freshwater bodies, and that the IBP program for freshwaters could well be helpful in this respect.

It is therefore recommended that the joint Working Group on marine communities should keep in close touch with the corresponding IBP group on freshwater communities.

RECOMMENDATION 18

(Agenda Items 13 and 14.1)

Stimulating and assisting research in particular fields

The Committee discussed the following subjects in a very preliminary way and considered that their importance warrants more serious consideration at its second session:

(a) Biochemical and chromatographic methods of identifying sub-populations (ACMRR/I/WP.11). The Committee recommends that one or more consultants be asked to review progress in the development of these methods and in their application to the solution of fisheries problems, and to prepare a report for consideration at its second session.

(b) Improvement of marine resources (ACMRR/1/WP.13). The Committee recommends that Fisheries Division bring its review of this subject up-to-date before the Committee's next meeting by referring it again to the organizations and individuals consulted in its preparation

The Committee established a Working Group to keep abreast of developments in both these fields, bearing in mind the report of the SCOR Working Party on Fishery Oceanography and the activities of IOC Working Group on Fixed Oceanographic Stations, and to report these to the Committee at its Second Session.

It recommends the appointment of Mr. V. Brock (Convener), Dr. M. Blackburn, Dr. J. Eggvin and Prof. M. Uda to the Committee's Working Group.

RECOMMENDATION 16

(Agenda Item 11.9)

Data exchanges

The Committee stressed the importance to progress in oceanographic research of full and rapid exchange of data (ACMRR/1/INF.9:Res.20). It recommends that the IOC continue to further the development of effective methods and procedures through its Working Group on the Organization of Oceanographic Data Exchanges, in close cooperation with the Fisheries Division of FAO. The Committee notes that valuable oceanographic data are resulting from some research projects financed by the Special Fund and strongly urges that every effort be made to ensure that the data from these internationally supported researches be made available through prompt transmissions to World Oceanographic Data Centres.

RECOMMENDATION 17

(Agenda Items 9,11.1 and 13)

International Biological Programme

The Committee heard from Mr. R. Glover (FAO Consultant) an explanatory statement concerning the International Biological Programme (IBP) being organized under the sponsorship of ICSU by a Planning Committee representing the various international scientific unions concerned, especially the IUBS (ACMRR/1/INF.11). The Committee had before it a request (ACMRR/1/WP.16) from the IBP Planning Committee that the ACMRR and SCOR join with the Planning Committee Working Group to plan and develop international programs on the biological productivity of communities throughout the oceans, including littoral regions. The Committee noted that the Director-General had expressed the broad interest of FAO in the IBP and that FAO Staff, including representatives of the Fisheries Division, had participated in the preliminary discussions and plans. The Committee believes that the objectives of the IBP in the marine field are important ones, and appreciated that the IBP Planning Committee had recognized that use should be made of existing machinery for the international coordination of marine research, that duplication of effort between international and regional organizations concerned should be avoided, and that a successful program would involve the

and to members of the Committee and other potential contributors. Further action at the second session of the Committee possibly through the establishment of a working group, is anticipated.

(c) Dynamic models for marine communities. The Committee considered that dynamic models of productivity, through all trophic levels and taking into account environmental factors, show promise of great usefulness, though now in an early stage of development. The Committee recommends that FAO suggest to ICES that that body consider the organization of a symposium on this subject, perhaps with the cooperation of other bodies. Committee members will also explore the possibility of having working papers prepared for its Second Session.

RECOMMENDATION 19

(Agenda Item 15)

Second Session of Committee

The Committee recommends that its Second Session be called at FAO Headquarters in Rome in 1964 between the ICNAF Environmental Symposium (which is expected to end about February 10th) and the third session of IOC and close in time to either of those meetings. The Session should last one week.

RECOMMENDATION 20

(Agenda Item 16)

Officers of the Committee

The Committee re-elected Dr. A.W.H. Needler as Chairman and Dr. C.E. Lucas (Rapporteur) and Prof. M. Uda as Vice-Chairman to serve until the end of its Second Session.

RECOMMENDATION 21

(Agenda Item 17)

Distribution of report

The Committee considered that the records of its discussions and recommendations arising from them would be of considerable interest and value to a wide variety of institutions, agencies and scientists.

The Committee therefore suggests to the Director-General that the Report of its First Session be issued in the official languages of the Organizations in the FAO Fisheries Reports series and arrangements made for it to be distributed as soon as possible, (and in any case before the forthcoming meeting of SCOR), and as widely as possible not only to participants and to member governments of FAO, but also to institutions and senior scientists concerned with marine research.